Mr. Thomas Yurik, 45100 Warp Drive, Dulles, VA 20171

United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION

EXPERIMENTAL	WG9XSR
(Nature of Service)	(Call Sign)
XT MO	0532-EX-ST-2013
(Class of Station)	(File Number)

NAME Orbital Sciences Corporation

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:
Cygnus spacecraft operations

Station Locations
(1) MOBILE: Spacecraft-350km altitude-52.5 degrees inclination

Frequency Information

MOBILE: Spacecraft-350km altitude-52.5 degrees inclination

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2202.9-2207.1 MHz	MO	4M20G1D	0.9 W (ERP)	0.00045 %
2213-2219 MHz	MO	6M00G1D	2 W (ERP)	0.0001 %
2214.5-2217.5 MHz	MO	3M00G1D	2 W (ERP)	0.0001 %

This authorization effective November 30, 2013 and
will expire 3:00 A.M. EST May 01, 2014

FEDERAL COMMUNICATIONS COMMISSION

Frequency Information

MOBILE: Spacecraft-350km altitude-52.5 degrees inclination

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
2215.984-2216.016 MHz	MO	32K0G1D	2 W (ERP)	0.0001 %
2215.992-2216.008 MHz	MO	16K0G1D	2 W (ERP)	0.0001 %

Special Conditions:

(1) All OSC operations, granted on an experimental basis, shall be on an unprotected, non-interference basis to authorized federal stations.

(2) All operations shall be limited to telemetry, tracking, and control (TT&C). This STA is limited to this single mission scheduled, as of July 3, 2013, for between November 30, 2013 to April 30, 2014, for the Cygnus Orb-1 spacecraft mission to the International Space Station (ISS). This STA will expire as soon as this mission has been completed, upon the destruct re-entry of the Cygnus spacecraft. Any future launches will need to submit applications to the FCC to be re-coordinated with NTIA.

(3) All OSC operations shall be consistent with the information e.g., Exhibits, provided in their filings to the FCC for this mission.

(4) OSC shall be aware that future non-federal launches will be considered on a case-by-case basis, especially for requests in the band 2200-2290 MHz, and OSC shall have no expectations that future launches will be approved.

(5) Prior to transmitting at Wallops Flight Facility, OSC shall coordinate and schedule their operations through NASA WFF Spectrum Manager, Felipe Arroyo, felipe.arroyo-1@nasa.gov, 757-824-1623, NOAA Satellite Operations Control Center (SOCC) Shift Supervisor (24/7), (301) 817-4198, and NOAA Philip.L.Whaley@noaa.gov (757-824-7331, extension 331).

(6) As soon as possible, but no later than seven days prior to the planned demonstration mission launch, OSC is required to provide Mr. Jimmy Nguyen (jimmy.nguyen@pentagon.af.mil, (301-225-3729), Air Force Spectrum Management Office (AFSMO), NASA WFF Spectrum Manager, Felipe Arroyo, felipe.arroyo-1@nasa.gov, 757-824-1623, and the NOAA Satellite Operations Control Center (SOCC) Shift Supervisor (24/7), (301) 817-4198, with the planned launch date/time/window/duration. In the event of last minute changes, 48 hour notice is requested.

(7) For the launch to re-entry OSC shall supply NTIA a 24/7 point-of-contact. This phone shall be manned 24/7 from launch to re-entry.

(8) All transmissions in the band 2200-2290 MHz will comply with national and international power flux-density (PFD) limits.

(9) The 2216 MHz mode 2 (narrowband) operation is limited to a declared spacecraft Emergency; notification to the FCC and the NTIA shall be provided as soon as practical upon an declared emergency.

Special Conditions:

(10) All transmission in the band 2200-2290 MHz will only be on when a receiving station is in view and scheduled to receive the transmission.

(11) A nominal mission communications plan (including reentry shall be provided to Jimmy.Nguyen@pentagon.af.mil (301-225-3729), vincent.s.galbraith@nasa.gov, mbielucki@mail.wsc.nasa.gov and catherine.c.sham@nasa.gov.

(12) When docked to the ISS, the operations plan for Cygnus shall be provided, no later than L-10 days to NASA/JSC Spectrum Manager, Catherine Sham, Catherine.c.sham@nasa.gov, 281-222-1117 for pre-coordination and agreement. Request for changes to the agreed operations plan shall be provided at least 24 hours prior to the desired operation.

(13) OSC shall keep a log of all transmissions in the band 2200-2290 MHz that will be provided to NTIA after the mission. This log should include at least date, time, frequency, eirp density, and pointing direction of the transmitting antenna. The log should be provided to the following people at NTIA: skotler@ntia.doc.gov and edavison@ntia.doc.gov.

(14) License is revised to include the following earth station points of communication for informational purposes only. Authorization to operate these stations is beyond the scope of this license and Orbital Sciences is responsible to ensure proper authority is obtained.

1. South Point Hawaii 19°North 155°39’ West
2. NASA Wallops 37.9455° -75.4611°
3. Fucino Italy 41.8605° 13.6032°
4. Santiago Chile -33°08’ -70°40’